NIST Cloud Computing Forum and Workshop VIII

Enterprise Cloud: Not Just a Click-Through Agreement

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Background and Context

- NASA is deploying an enterprise managed approach to cloud computing that
  - Provides uniform agency cloud governance
  - Provides an enterprise framework defining consistent technical integrations and security compliance
  - Separates the acquisition and provisioning of the cloud infrastructure and integration framework from the people and services that build applications to run on the infrastructure
  - Employs a single contract vehicle per vendor for Agency-wide use facilitating volume pricing and best control over data sprawl
- You have to start somewhere
  - NASA started with Amazon Web Services (AWS)
  - As cloud adoption increases and users bring in new requirements we will add additional cloud service providers as required

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Complexities

- Lawyers get involved! Many agencies will not be able to sign the standard vendor legal agreement

- Many vendors do not sell directly to government, only through resellers, integrators and partners (sometimes with their own subcontractors, which further complicates agreements and makes for long review cycles)

- Can't know for sure in advance what specific quantities of individual cloud services will be needed (that elastic thing…you use what you use)

- Once you sign the contract, 5 new services will be available from the CSP, 6 more next month (and your Agency will want them right away)

- The price of individual cloud services you contract for today will be reduced tomorrow

- Agency "ownership" of everything put in the cloud (including deployment configurations) needs to be clear up front or end of contract term might be messy and expensive

- Some cloud providers/resellers/partners/integrators want the Gov't to indemnify them

- Current public sector revenues are insignificant for some large CSP's making it difficult to make headway in resolving challenges specific to government use

- Not all services from FedRAMP's CSP are always within their FedRAMP authorization boundary…and may not be for a long time

- Not all services available to commercial cloud environments are available within CSP environments offered specifically for public sector use

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Contract Structure

- Using NASA Solutions for Enterprise-Wide Procurement (SEWP) contract
- Cloud services consumption ONLY, no integration services included in the procurement
- SOW required a high level of Agency control in the reseller relationship – reseller is a pass through with no credentialed access to NASA Cloud accounts (NASA owns all IP in account)
- Contract supports "non specific ordering" of estimated resources and includes entire range of services that exist today and all those that will exist in the future
- NASA pays published prices
- Invoicing is based on actual consumption
- Reseller passes through all cloud provider price reductions, science focused price incentives and reseller volume based discounts
- Clear provisions for end-of-contact administrative transfer of account back to new reseller or NASA

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Non-Specific Ordering: From the RFQ

This Delivery Order with option quantities provides an enterprise-wide solution for cloud services against NASA SEWP contract number TBD and is subject to the terms and conditions of that contract, as well as the terms and conditions agreed to by the parties and set forth in this purchase order and its attachments. The minimum total amount of AWS that shall be placed is $50,000. The Contracting Officer may increase the minimum order to a maximum total amount of AWS of $8,000,000. The minimum may be increased in option quantity increments of $5,000. For each option quantity increase, the delivery order will be modified and a new order line item number established at a price of $1.00 per unit.

ORDER LINE ITEM NO.	DESCRIPTION OF SERVICES	QTY	UNIT	UNIT PRICE	PRICE	AWARD DATE
001	AWS – Base Delivery Order	50,000	EA	$1.00	$50,000.	TBD
002	AWS – Modification 1					TBD

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Non-Specific Ordering: From the PR

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

███████████████████████████

This modification 00003 is issued under Delivery Order NNA15SA07D to revise order as follows:

1. Add Order Line Item 003 to purchase 266,800 units @ $1.00 per unit for a total line item 003 cost of $266,800.00.

2. Revise Order Line Item 002 to reflect additional SEWP fee of $1200.60 resulting from Co purchase of additional units in Line Item 003.
(was $225, is $1,425.60)

The changes noted above are reflected in Section 1 (see page 2 of this mod) and result in an increase in the total cost of Amazon Web Services Order NNA15SA07D

From: $50,225.00
To: $318,225.60

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The Process

- Cloud business office handles the incoming funds from customers, placement of funds on the contract and tracks the AWS consumption and customer billing

- Think of it as a rechargeable Starbucks card
  - Customer sends money (charges up their card!)
  - The resources they consume in AWS are tagged to them
  - When the monthly AWS bill arrives, customer "Starbucks card" is debited and customer gets detailed documentation
  - When card balance gets low, customers "recharge" by sending more money

- Today processing manually; in process of evaluating tools to automate the business management process and controls

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Lessons Learned

- **DO A PILOT!**
    - Do iterations of small acquisitions through desired vehicles, mechanisms and processes
    - You will find out quickly what works and doesn't work and you can fix it in the next iteration and try again
    - Might take several attempts; pilot technical integration, business processes, and security approach in parallel

- **Use the Cloud Best Practices document issued by the Federal Procurement Officers**
    - Proper handling of the items addressed in this document help protect your Agency and your data in the event of compromises, at the relationship and/or contract end, and also in general operations
    - Auditors will specifically be looking for MANY of the items that are addressed in that document

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